Title: SYSTEMS AND METHODS FOR ROUTING
EMPLOYING LINK STATE AND PATH VE CTOR TECHNIQUES
Inventor: Susan Hares
Docket No.: 41434-8003.US00
Perkins Coie LLP (650) 838-4300
Page 1 of 5

Figure 1

Title: SYSTEMS AND METHODS FOR ROUTING
EMPLOYING LINK STATE AND PATH VECTOR TECHNIQUES
Inventor: Susan Hares
Docket No.: 41434-8003.US00
Perkins Coie LLP (650) 838-4300
Page 2 of 5
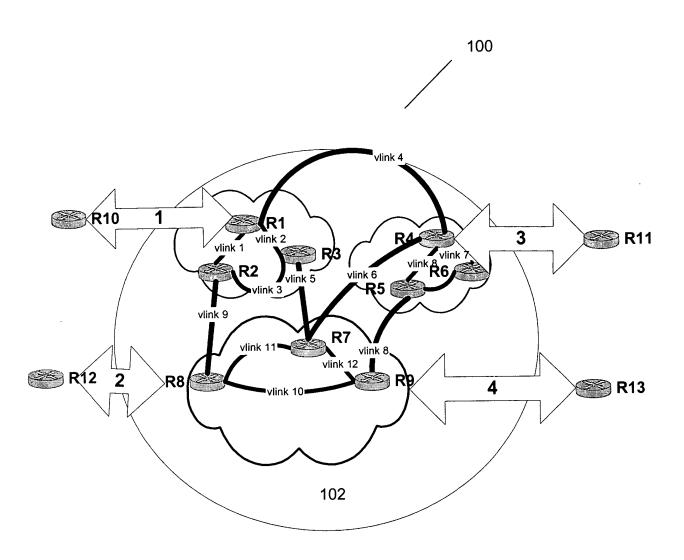
level 1 link
level 2 link
level 2/3 link

Hello for levels 1, 2 and 3
from R5

208

Hello for levels 2
and 3 from
R9

210

Hello for levels
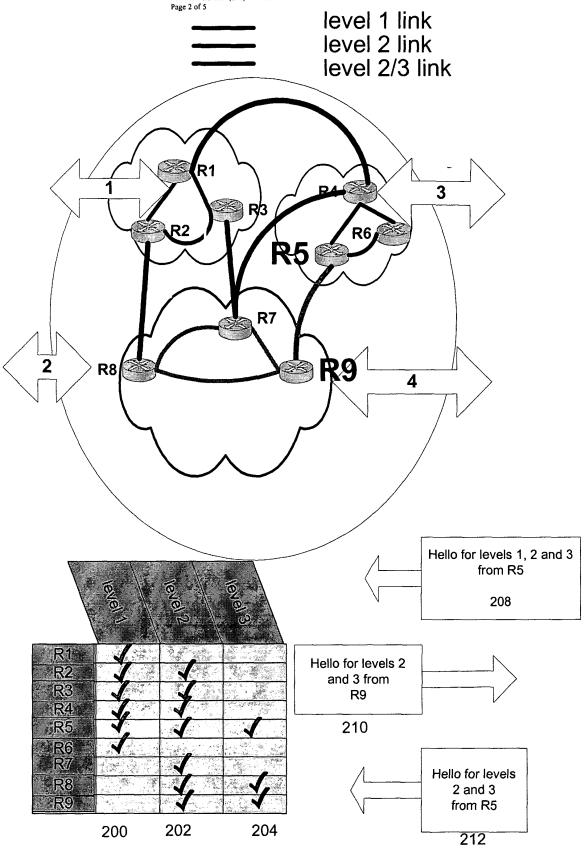2 and 3
from R5

212

Figure 2

Title: SYSTEMS AND METHODS FOR ROUTING
EMPLOYING LINK STATE AND PATH VECTOR TECHNIQUES
Inventor: Susan Hares
Docket No.: 41434-8003.US00
Perkins Coie LLP (650) 838-4300
Page 3 of 5

300

LSPV Adjacency DB			
Peer -ID			
LSPV NextHop pointer	VC Distance	Virtual Circuit 1 ID	Virtual Circuit 1 pointer
IGP distance	IGP NextHop Address	pointer to interface	IGP NextHop Address
Peer -ID			
LSPV NextHop pointer	VC Distance	Viritual Circuit 1 ID	Viritual Circuit 1 pointer
IGP distance	IGP NextHop Address	pointer to interface	IGP NextHop Address

302

Local Peer Topology Database					
Peer -ID					
Distance	Virtual Circuit ID	Next Hop VC neighbor Address			
Current neighbor info	Last Sent info to Neighbor	Last Recieved Neighbor Info	Virtual Circuit 1	Virtual Circuit 2	Virtual Circuit n

Address information				
Alternate Address Information				
Level	AS	Policy DB ID	Virtual Circuit ID	Type
Maximum routes per prefix	Policy Domain ID			
Capabilties				
RIBs				
Peer Policy information				
Link to circuits				

Virtual Circuit		
Traffic Engineering parameters	Security parameters	Status

Virtual Circuit		
Traffic Engineering parameters	Security parameters	Status

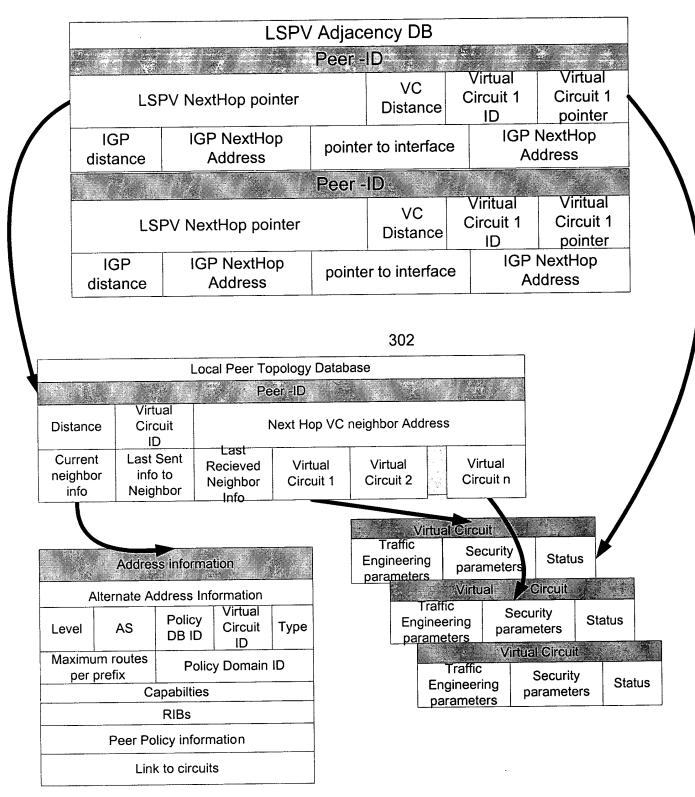| Virtual Circuit		
Traffic Engineering parameters	Security parameters	Status

Figure 3

Title: SYSTEMS AND METHODS FOR ROUTING
EMPLOYING LINK STATE AND PATH VECTOR TECHNIQUES
Inventor: Susan Hares
Docket No.: 41434-8003.US00
Perkins Coie LLP (650) 838-4300
Page 4 of 5

protocol descrimin-ator (0x85)	fixed length	version	ID length	level, type field	minor version	reserved / Ack	max routes

400

level, type LLLLL TTT

Format: LLLLL TTT

LLLLL: level of the LSPV peer, either numbers 0-32 or bit mask for levels 1-5

reserved / Ack /Level type

Format: 00000 LL

Where LL may take one of the following values:

00 - single hello per pdu
01 - hello uses bit mask
10 - hello uses extended field
11 - reserved

Figure 4

Title: SYSTEMS AND METHODS FOR ROUTING
EMPLOYING LINK STATE AND PATH VECTOR TECHNIQUES
Inventor: Susan Hares
Docket No.: 41434-8003.US00
Perkins Coie LLP (650) 838-4300
Page 5 of 5

protocol descrim-in-ator (0x85)	fixed length	version = 01	ID length = 6	01110, 001 [levels 1-3, hello]	minor version	000 000 01 [level bit mask]	max routes/ prefix =15
circuit id [01 - local tunnel id]	src id = 192.	src id = 10.	src id = 15.	src id = .5	src-id 10	src-id 10	hold time (1) = 0
Holding Time (2) = 120	Pdu length (1)	Pdu Length (2)	Priority (1)	LAN ID = 01	Global src-id (1) 5	Global src-id (2) = [Policy Domain 0.0.0.0.1]	Global src-id (3) = [Policy Domain 0.0.0.0.1]
Global src-id (4) = [Policy Domain 0.0.0.0.1]	Global src-id (5) = [Policy Domain 0.0.0.0.1]	Global src-id (6) = [Policy Domain 0.0.0.0.1]	length (1)	length (2)	TLV = Security (4)	TLV length (1)	TLV length (2)
Security ID = 20	type of associ-ation = Peer (0)	security info = TCP authenti c-ation	auth-type = HMAC MD5	length (4)	Pass = hope		
	TLV = RIBs (4)	TLV length (1)	TLV length (2)	RIB ID =1	Support = Graceful restart, Route Refresh NLRI	AFI (1) AFI (2) = IP v4	
SAFI = Unicast only	Restart state = [0 0 60] not restart, not awaiting End of RIB, 60second restart	Number of Communities associated with RIB					

500

Figure 5